

In the Drawings:

Please delete FIG. 3.

Enclosed are original drawing sheets 4-7 (FIGS. 4-9) with proposed changes made in red permanent ink. Also enclosed are new replacement drawings 3-6 (new FIGS. 3-8) with the proposed changes made in the drawings.

In the Specification:

Please delete paragraph 17.

Please replace paragraph 18 with the following:

--FIG. 3 is an exploded perspective view of an alternative embodiment of a ultracapacitor energy storage cell pack.--

Please replace paragraph 19 with the following:

--FIG. 4 is an exploded perspective view of the ultracapacitors and support plates of the ultracapacitor energy storage cell pack of FIG. 3.--

Please replace paragraph 20 with the following:

--FIG. 5 is perspective detail view taken of detail 5 of the ultracapacitors, threaded interconnections between the ultracapacitors, and parallel drain resistors mounted with ring terminals of the ultracapacitor energy storage cell pack of FIG. 4.--

Please replace paragraph 21 with the following:

--FIG. 6 is a side-elevational view of an embodiment of a middle support plate of the ultracapacitor energy storage cell pack illustrated in FIG. 3, and the middle support plate is shown with cutouts for the ultracapacitors and the drain resistors.--

Please replace paragraph 22 with the following:

--FIG. 7 is a side-elevational view of an embodiment of an end support plate of the ultracapacitor energy storage cell pack illustrated in FIG. 3, and the end support plate is shown with cutouts for the mounting bolts and the support guide mounting rivets.--

Please replace paragraph 23 with the following:

--FIG. 8 is a block diagram of the ultracapacitor energy storage cell pack illustrated in FIG. 3.--

Please replace paragraph 32 with the following:

--Two identical main circuit boards 70 (e.g., 40-ultracapacitor main circuit boards) may lay on top of the foam rubber sheets 90, 95. Each main circuit board 70 may include holes that the ultracapacitor terminals 45 protrude through. Each circuit board 70 may have mounting holes for 40 (8 by 5) ultracapacitors less two corner positions required for frame structure mounting. Instead of two circuit boards 70, a single circuit board 70 may be used. Thus, as used herein, the word "circuit board" means one or more circuit boards. Fasteners such as lug nuts fasten the individual ultracapacitor terminals 45 and copper bars 105 to the circuit boards 70 and compress the foam rubber sheets 90, 95 in between the cover 55 of the ultracapacitor 20 and the circuit boards 70. Thus, the circuit board 70 forms the location and mechanical

support as well as the electrical connections for the ultracapacitors 20. The foam sheets 90, 95 seal around the rim of the ultracapacitor terminals 45. A processor and display circuit board mounts on top of the main circuit board 70.--

Please replace paragraph 38 with the following:

--With reference to FIGS. 3-8, and initially, FIGS. 3 and 4, an ultracapacitor energy storage cell pack (hereinafter "ultracapacitor pack) 200 constructed in accordance with another embodiment of the invention will now be described. The ultracapacitor pack 200 includes a ultracapacitor cell and winerack support assembly (hereinafter "ultracapacitor assembly") 210, an ultracapacitor pack box enclosure (hereinafter "box enclosure") 220, a metal lid 230, an air filter bracket 240 (w/ air filter), cooling fans 250, fan finger guards 260, higher-power precharge resistor 270, Programmable Logic Controller module (hereinafter "PLC") 280, high power relays (kilovac contactors) 290, electrical connectors 300, 310, 320 and other discrete components mounted within the box enclosure 220.--

Please replace paragraph 39 with the following:

--The ultracapacitor assembly 210 includes one-hundred and forty-four (144) ultracapacitors 330 connected in series to provide a nominal 360 volts DC, 325 watt-hours energy storage. The value of each ultracapacitor 330 is 2600 Farads. In alternative embodiments, the ultracapacitor assembly 210 may have other numbers of ultracapacitors, different types of ultracapacitors, and/or an overall different amount of voltage and/or power. Each ultracapacitor 330 is connected with a parallel drain resistor 340 (FIG. 5). The ultracapacitor assembly 210 includes a first wine rack middle support plate 350, a similar second wine rack

middle support plate 360, and a wine rack end support plate 370 for supporting the ultracapacitors 330.--

Please replace paragraph 41 with the following:

--FIG. 4 shows an exploded view of the ultracapacitor assembly 210. The ultracapacitors 330 are cylindrical canisters with aluminum female threaded connections at each end, which receive male threaded aluminum interconnection studs 400 for connecting the ultracapacitors 330 in series. Aluminum bus bars 410 and aluminum interconnection washers are also used to interconnect the ultracapacitors 330 in series at the ends of the rows. Providing electrical connections made of aluminum metal prevents any corrosive galvanic effects from dissimilar metals. Additionally, the threaded connections are covered with a silicon dielectric grease to prohibit environmentally caused corrosion.--

Please replace paragraph 43 with the following:

--With reference to FIG. 6, the wine rack middle support plates 350, 360 include a pattern of generally circular cutouts 430 for receiving the ultracapacitors 330. The cutouts 430 include an additional semi-circular recess 440 to accommodate and support the drain resistors 340. The drain resistors 340 are preformed with ring terminals 442 (FIG. 5) attached to leads of the drain resistors 340 for simplicity of mounting and electrical connection. Additional semi-circular recesses 450 along a top edge 460 and bottom edge 470 of the wine rack middle support plates 350, 360 provide clearance for the attaching rivets of support guides on a bottom of box enclosure 220 and the lid 230. The wine rack middle support plates 350, 360 are made of 3/16" thick polycarbonate plastic for strength and electrical insulation.--

Please replace paragraph 44 with the following:

--With reference to FIG. 7, the wine rack end support plate 370 includes a pattern of circular holes 480 for receiving threaded bolt fasteners for mounting the ultracapacitors 330. Additional semi-circular recesses 490 along a top edge 500 and a bottom edge 510 of the wine rack end support plate 370 provide clearance for the attaching rivets of support guides on a bottom of the box enclosure 220 and the lid 230. The wine rack end support plate 370 is made of 3/16" thick Grade G-10/FR4 Garolite glass fabric laminate with an epoxy resin that absorbs virtually no water and holds its shape well. Inside-mounted aluminum bus bars 410 are affixed in place to the wine rack end support plate 370 with silicon RTV (Room Temperature Vulcanizing, which is a common jelly-like paste that cures to a rubbery substance used in various applications as adhesive and/or sealer). The bus bars 410 are pre-positioned to avoid confusion that could cause assembly mistakes.--

Please replace paragraph 45 with the following:

--FIG. 8 is a general block diagram of the ultracapacitor pack 200. As indicated above, each ultracapacitor 330 is connected in parallel with the drain resistor 340. One-hundred and forty-four (144) of these parallel connections are connected in series to provide a nominal 360 volts DC, 325 watt-hours energy storage. The value of each ultracapacitor 330 is 2600 Farads and the value and power of the drain resistor 340 is selected to completely discharge the ultracapacitor 330 over a number of hours during an inactive period of the ultracapacitor pack 200. The energy drain action is slow enough so as not to interfere with the normal operation of the ultracapacitor pack 200. The discharge is also slow enough so as not to

cause any significant temperature increase from the drain resistors 340 within the ultracapacitor pack 200. The chemical composition of the ultracapacitor 330 allows charge to build up across the ultracapacitor 330 over a period of time after the ultracapacitor 330 is shorted and left open. The drain resistors 340 allow a safe discharge of the high voltage of the ultracapacitor pack 200 to eliminate any shock danger from the ultracapacitor "memory" to personnel servicing the ultracapacitor pack 200.--